

REMARKS

The Office Action dated April 9, 2003 has been carefully reviewed and the following response has been made in consequence thereof.

Claims 1-12 and 16-23 are now pending in this application. Claims 1-12 stand rejected. Claims 16-23 are newly added. Claims 13-15 have been canceled.

In accordance with 37 C.F.R. 1.136(a), a three month extension of time is submitted herewith to extend the due date of the response to the Office Action dated April 9, 2003, for the above-identified patent application from July 9, 2003, through and including October 9, 2003. In accordance with 37 C.F.R. 1.17(a)(3), authorization to charge a deposit account in the amount of \$950 to cover this extension of time request also is submitted herewith.

The rejection of Claims 1 and 7 under 35 U.S.C. § 102(b) as being anticipated by Sakashita, Unexamined Utility Patent 6-009355, (hereinafter referred to as "Sakashita") is respectfully traversed.

Sakashita describes a pair of metal bearings (2) and (3) that rotatably support a shaft (1). Metal bearings are held by an insulation holder (4). A yoke plate (5) extends into the inside of a through hole (4A). A bottom (2B) of metal bearing (2) is brought in contact with an end surface (5D) of the yoke plate. The yoke plate may be grounded.

Claim 1 recites a bearing current reduction assembly including "a rotor shaft; an inner bearing cap substantially radially aligned with said rotor shaft, said inner bearing cap comprising an inner end, said inner end in close proximity to said rotor shaft; and a charge concentrator disposed on at least one of said rotor shaft and said inner end, said charge concentrator positioned between said rotor shaft and said inner end". Sakashita neither describes nor suggests a bearing current reduction assembly including a rotor shaft, an inner bearing cap substantially radially aligned with the rotor shaft, the inner bearing cap including an inner end, the inner end in close proximity to the rotor shaft, and a charge concentrator disposed on at least one of the rotor shaft and the inner end, the charge concentrator positioned between the rotor shaft and the inner end. Rather, Sakashita describes an insulation holder 4 and an end surface 5D of a yoke plate 5, whereby the yoke plate may be

grounded. Insulation holder 4 and end plate 5D do not function as a charge concentrator. For the reasons set forth above, Claim 1 is submitted to be patentable over Sakashita.

Claim 7 recites an electric motor assembly including “a motor housing; a stator mounted in said housing and comprising a bore therethrough; a rotor core rotatably mounted in said housing and extending through said stator bore; a rotor shaft extending through said rotor core; at least one endshield; an inner bearing cap radially aligned with said rotor shaft, said inner bearing cap having an inner end and an outer end, said inner end in close proximity to said rotor shaft; and a charge concentrator disposed on at least one of said rotor shaft and said inner end, said charge concentrator positioned between said rotor shaft and said inner end”. Sakashita neither describes nor suggests an electric motor assembly including a motor housing, a stator mounted in the housing and including a bore therethrough, a rotor core rotatably mounted in the housing and extending through the stator bore, a rotor shaft extending through the rotor core, at least one endshield, an inner bearing cap radially aligned with the rotor shaft, the inner bearing cap having an inner end and an outer end, the inner end in close proximity to the rotor shaft, and a charge concentrator disposed on at least one of the rotor shaft and the inner end, the charge concentrator positioned between the rotor shaft and the inner end. Rather, Sakashita describes an insulation holder 4 and an end surface 5D of a yoke plate 5, whereby the yoke plate may be grounded. Insulation holder 4 and end plate 5D do not function as a charge concentrator. For the reasons set forth above, Claim 7 is submitted to be patentable over Sakashita.

For the reasons set forth above, Applicant respectfully requests that the Section 102 rejection of Claims 1 and 7 be withdrawn.

The rejection of Claims 3-6 and 9-12 under 35 U.S.C. § 103(a) as being unpatentable over Sakashita in view of Newberg, U.S. Patent No. 4,710,037, (hereinafter referred to as “Newberg”) is respectfully traversed.

Sakashita is described above. Newberg describes a bearing retainer structure including an endshield (2), a bearing support means in the form of an annular support lip (12), and an annular space (19). More specifically, annular space is provided to receive an expandable-compressible fastening device (21) which retains a bearing (14) in position to

enhance the resistance to torsional, axial, and radial thrusts. (See Col. 3, lines 44-46 of Newberg).

Neither Sakashita nor Newberg, considered alone or in combination, describe or suggest the claimed combination. Specifically, Claims 3-6 depend from Claim 1 which recites a bearing current reduction assembly including “a rotor shaft; an inner bearing cap substantially radially aligned with said rotor shaft, said inner bearing cap comprising an inner end, said inner end in close proximity to said rotor shaft; and a charge concentrator disposed on at least one of said rotor shaft and said inner end, said charge concentrator positioned between said rotor shaft and said inner end”. Neither Sakashita nor Newberg, considered alone or in combination, describe or suggest a bearing current reduction assembly including a rotor shaft, an inner bearing cap substantially radially aligned with the rotor shaft, the inner bearing cap including an inner end, the inner end in close proximity to the rotor shaft, and a charge concentrator disposed on at least one of the rotor shaft and the inner end, the charge concentrator positioned between the rotor shaft and the inner end. Rather, Sakashita describes an insulation holder 4 and an end surface 5D of a yoke plate 5, whereby the insulation holder 4 and end plate 5D do not function as a charge concentrator, and Newberg describes a bearing retainer structure including an endshield and an annular support lip. For the reasons set forth above, Claim 1 is submitted to be patentable over Sakashita in view of Newberg.

Claims 3-6 depend from independent Claim 1. When the recitations of Claims 3-6 are considered in combination with the recitations of Claim 1, Applicant submits that dependent Claims 3-6 likewise are patentable over Sakashita in view of Newberg.

Claims 9-12 depend from Claim 7 which recites an electric motor assembly including “a motor housing; a stator mounted in said housing and comprising a bore therethrough; a rotor core rotatably mounted in said housing and extending through said stator bore; a rotor shaft extending through said rotor core; at least one endshield; an inner bearing cap radially aligned with said rotor shaft, said inner bearing cap having an inner end and an outer end, said inner end in close proximity to said rotor shaft; and a charge concentrator disposed on at least one of said rotor shaft and said inner end, said charge concentrator positioned between said rotor shaft and said inner end”. Neither Sakashita nor Newberg, considered alone or in combination, describe or suggest an electric motor assembly including a motor housing, a

stator mounted in the housing and including a bore therethrough, a rotor core rotatably mounted in the housing and extending through the stator bore, a rotor shaft extending through the rotor core, at least one endshield, an inner bearing cap radially aligned with the rotor shaft, the inner bearing cap having an inner end and an outer end, the inner end in close proximity to the rotor shaft, and a charge concentrator disposed on at least one of the rotor shaft and the inner end, the charge concentrator positioned between the rotor shaft and the inner end. Rather, Sakashita describes an insulation holder 4 and an end surface 5D of a yoke plate 5, whereby the insulation holder 4 and end plate 5D do not function as a charge concentrator, and Newberg describes a bearing retainer structure including an endshield and an annular support lip. For the reasons set forth above, Claim 7 is submitted to be patentable over Sakashita in view of Newberg.

Claims 9-12 depend from independent Claim 7. When the recitations of Claims 9-12 are considered in combination with the recitations of Claim 7, Applicant submits that dependent Claims 9-12 likewise are patentable over Sakashita in view of Newberg.

Applicant respectfully submits that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Sakashita nor Newberg, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicant respectfully submits that it would not be obvious to one skilled in the art to combine Sakashita with Newberg, because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant's own teaching. Rather, only the conclusory statement that "[i]t would have been obvious at the time the invention was made to modify Sakashita bearing assembly with the teaching of Newberg Bearing retainer structure to eliminate or reduce the build up of electric potentials on the shaft or in bearings of a motor" is provided as support for combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex

parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicant's disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Sakashita is cited for its teaching of an insulation holder and an end surface of a yoke plate, and Newberg is cited for its teaching of a bearing retainer structure comprising an endshield and a bearing support means in the form of an annular support lip. There is no teaching or suggestion in the cited art for the claimed combination, and as such, the Section 103 rejection appears to be solely based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Such a combination is impermissible, and for this reason alone, Applicant requests that the Section 103(a) rejection be withdrawn.

For the reasons set forth above, Applicant respectfully requests that the rejection of Claims 3-6 and 9-12 under Section 103(a) as being unpatentable over Sakashita in view of Newberg be withdrawn.

The rejection of Claims 2 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Sakashita as applied to Claims 1, 3-7 and 9-12 above, and further in view of Shiraishi, U.S. Patent No. 4,515,417, (hereinafter referred to as "Shiraishi") is respectfully traversed.

Sakashita and Newberg are described above. Shiraishi describes a stator (1), a rotor (2), a shaft (2a), a bearing (3), an electrically conductive end cover (4) attached to stator, and a centrifugal contact point (7) which is attached to a protrusion (2c) of shaft. Centrifugal contact point is made of a resilient metal and has a curved shape with one end in contact with end cover when motor is standing still or rotating at low speeds. Centrifugal contact point contacts end cover (as shown in Figure 3) when the rotary electric machine is at rest or is running at speeds close to rest. Therefore, an electric current i flows at the moment the shaft voltage is induced at the time of starting through shaft, protrusion, contact, cover, and stator, thereby bypassing a bearing (3), and accordingly, no current flows through bearing. As the running speed of shaft gradually increases, the curvature of contact point decreases due to the centrifugal force, as shown in Figure 4. That is, contact point separates from end cover, and the grounding circuit therethrough is broken. Thus, bearing is prevented from being electrolytically corroded at the time of starting, and is thereby prevented from being worn out.

None of Sakashita, Newberg, and Shiraishi, considered alone or in combination, describe or suggest the claimed combination. Specifically, Claim 2 depends from Claim 1 which recites a bearing current reduction assembly including “a rotor shaft; an inner bearing cap substantially radially aligned with said rotor shaft, said inner bearing cap comprising an inner end, said inner end in close proximity to said rotor shaft; and a charge concentrator disposed on at least one of said rotor shaft and said inner end, said charge concentrator positioned between said rotor shaft and said inner end”. None of Sakashita, Newberg, and Shiraishi, considered alone or in combination, describe or suggest a bearing current reduction assembly including a rotor shaft, an inner bearing cap substantially radially aligned with the rotor shaft, the inner bearing cap including an inner end, the inner end in close proximity to the rotor shaft, and a charge concentrator disposed on at least one of the rotor shaft and the inner end, the charge concentrator positioned between the rotor shaft and the inner end. Rather, Sakashita describes an insulation holder 4 and an end surface 5D of a yoke plate 5, whereby the insulation holder 4 and end plate 5D do not function as a charge concentrator, Newberg describes a bearing retainer structure including an endshield and an annular support lip, and Shiraishi describes a contact point providing a grounding circuit. For the reasons set forth above, Claim 1 is submitted to be patentable over Sakashita and Newberg and further in view of Shiraishi.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 is considered in combination with the recitations of Claim 1, Applicant submits that dependent Claim 2 likewise is patentable over Sakashita and Newberg and further in view of Shiraishi.

Claim 8 depends from Claim 7 which recites an electric motor assembly including “a motor housing; a stator mounted in said housing and comprising a bore therethrough; a rotor core rotatably mounted in said housing and extending through said stator bore; a rotor shaft extending through said rotor core; at least one endshield; an inner bearing cap radially aligned with said rotor shaft, said inner bearing cap having an inner end and an outer end, said inner end in close proximity to said rotor shaft; and a charge concentrator disposed on at least one of said rotor shaft and said inner end, said charge concentrator positioned between said rotor shaft and said inner end”. None of Sakashita, Newberg, and Shiraishi, considered alone or in combination, describe or suggest an electric motor assembly including a motor housing, a stator mounted in the housing and including a bore therethrough, a rotor core rotatably mounted in the housing and extending through the stator bore, a rotor shaft extending through the rotor core, at least one endshield, an inner bearing cap radially aligned with the rotor shaft, the inner bearing cap having an inner end and an outer end, the inner end in close proximity to the rotor shaft, and a charge concentrator disposed on at least one of the rotor shaft and the inner end, the charge concentrator positioned between the rotor shaft and the inner end. Rather, Sakashita describes an insulation holder 4 and an end surface 5D of a yoke plate 5, whereby the insulation holder 4 and end plate 5D do not function as a charge concentrator, Newberg describes a bearing retainer structure including an endshield and an annular support lip, and Shiraishi describes a contact point providing a grounding circuit. For the reasons set forth above, Claim 7 is submitted to be patentable over Sakashita and Newberg and further in view of Shiraishi.

Claim 8 depends from independent Claim 1. When the recitations of Claim 8 is considered in combination with the recitations of Claim 1, Applicant submits that dependent Claim 8 likewise is patentable over Sakashita and Newberg and further in view of Shiraishi.

Applicant respectfully submits that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination.

None of Sakashita, Newberg, and Shiraishi, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicant respectfully submits that it would not be obvious to one skilled in the art to combine Sakashita and Newberg with Shiraishi, because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant's own teaching. Rather, only the conclusory statement that "[i]t would have be obvious to one having ordinary skill in the art at the time the invention was made to modify the bearing assembly of Sakashita and Newberg with the charge concentrator of Shiraishi for the purpose of short-circuiting the rotor shaft and the end cover at low speeds" is provided as support for combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicant's disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Sakashita is cited for its teaching of an insulation holder and an end surface of a yoke plate, Newberg is cited for its teaching of a bearing retainer

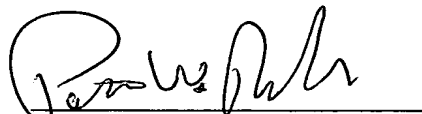
structure comprising an endshield and a bearing support means in the form of an annular support lip, and Shiraishi is cited for a bearing assembly. There is no teaching or suggestion in the cited art for the claimed combination, and as such, the Section 103 rejection appears to be solely based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Such a combination is impermissible, and for this reason alone, Applicant requests that the Section 103(a) rejection be withdrawn.

For the reasons set forth above, Applicant respectfully request that the rejection of Claims 2 and 8 under Section 103(a) as being unpatentable over Sakashita and Newberg and further in view of Shiraishi be withdrawn.

With respect to newly added Claims 16-23, Claim 16 recites that the charge concentrator extends from at least one a rotor shaft and an inner end to define a clearance between the rotor shaft and the inner end and that the charge concentrator includes a sharp edge. None of Sakashita, Newberg, and Shiraishi, considered alone or in combination, describe or suggest a charge concentrator extending from at least one a rotor shaft and an inner end to define a clearance between the rotor shaft and the inner end and that the charge concentrator includes a sharp edge. Claims 17-23 depend from Claim 16. For at least the reasons set forth above, Claims 16-23 are submitted to be patentable over Sakashita, Newberg, and Shiraishi, considered alone or in combination.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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